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(54) **Method of fabricating a high-performance insulated-gate-field-effect transistor and transistor fabricated by it.**

(57) An improved device fabrication method and transistor structure 36 provide shallow, heavily doped, source/drain junction regions 64 and a uniformly doped lower gate region 50 having a high concentration of dopants efficiently distributed near the gate electrode/gate interface 51. The gate, source, and drain terminals of transistor 36 may be interconnected to other neighboring or remote devices through the use of reacted refractory metal interconnect segments 98 and 100. Transistor structure 36 of the present invention may be constructed in an elevated source/drain format to include elevated source/drain junction regions 87 which may be fabricated simultaneous with a primary upper gate electrode region 88. This elevated source/drain junction feature is provided without added device processing complexity.

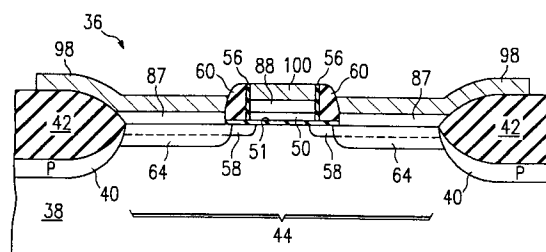


FIG. 19

EP 0 480 446 A3



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EUROPEAN SEARCH REPORT

Application Number

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 91117361.5
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	<u>JP - A - 2 222 153</u> (TEXAS INSTRUMENTS) * Fig. 2A-D and corresp. text *	1-6, 17-21, 24	H 01 L 21/336 H 01 L 21/28 H 01 L 29/08 H 01 L 29/60 H 01 L 29/784
Y	* Fig. 2A-D and corresp. text * & US-A-4 998 150 --	9-16, 22-23	
Y	<u>US - A - 4 784 971</u> (CHIU et al.) * Fig. 1-14 and corresp. text *	9-16, 22-23	
X	-- <u>US - A - 4 577 392</u> (PETERSON) * Fig. 1-7 and corresp. text *	1,4-8, 17,21	
Y	* Fig. 1-7 and corresp. text *	14-16, 22-23	
A	-- <u>US - A - 4 948 745</u> (PFIESTER et al.) * Fig. 1-6 and corresp. text *	1, 17	TECHNICAL FIELDS SEARCHED (Int. Cl.5) H 01 L
The present search report has been drawn up for all claims			
Place of search VIENNA		Date of completion of the search 30-11-1994	Examiner KUTZELNIGG
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			